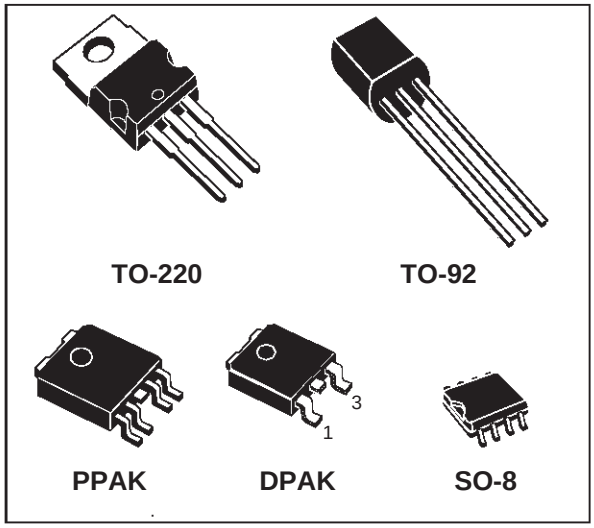
查询L4931 SERIES供应商

L4931 SERIES

VERY LOW DROP VOLTAGE REGULATORS WITH INHIBIT

- VERY LOW DROPOUT VOLTAGE (0.4V)
- VERY LOW QUIESCENT CURRENT (TYP. 50 µA IN OFF MODE, 600µA IN ON MODE)
- OUTPUT CURRENT UP TO 250 mA
- LOGIC-CONTROLLED ELECTRONIC SHUTDOWN
- OUTPUT VOLTAGES OF 1.25; 1.5; 2.5; 2.7; 3; 3.3; 3.5; 4; 4.5; 4.7; 5; 5.2; 5.5; 6; 8; 12V
- INTERNAL CURRENT AND THERMAL LIMIT
- ONLY 2.2µF FOR STABILITY
- AVAILABLE IN ± 1% (AB) OR 2% (C) SELECTION AT 25 °C
- SUPPLY VOLTAGE REJECTION: 70db TYP. FOR 5V VERSION
- TEMPERATURE RANGE: -40 TO 125 °C

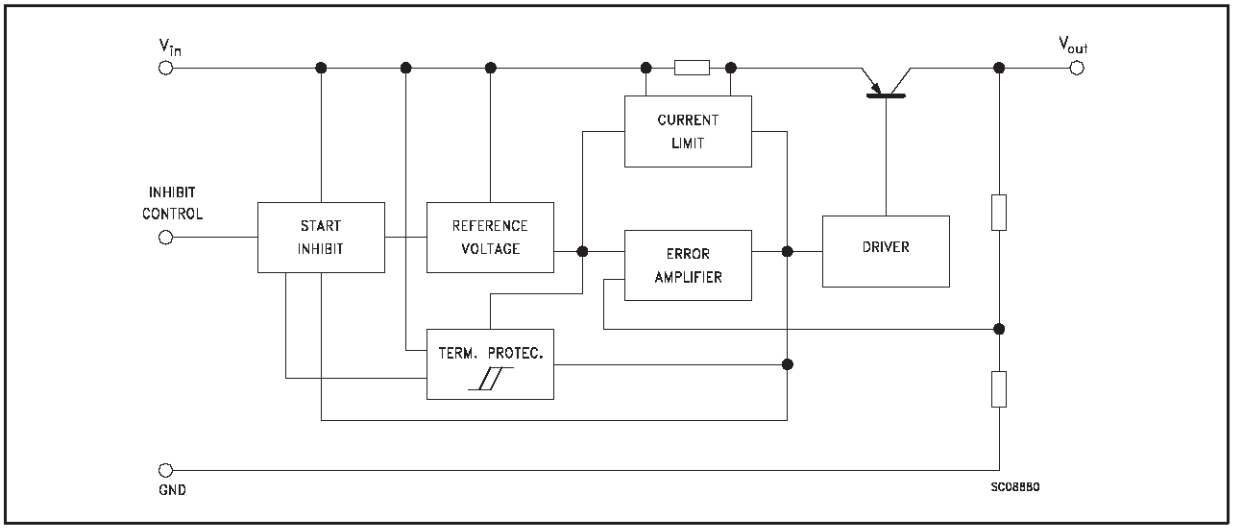


DESCRIPTION

The L4931 series are very Low Drop regulators available in TO-220, SO-8, DPAK, PPAK and TO-92 packages and in a wide range of output voltages.
The very Low Drop voltage (0.4V) and the very low quiescent current make them particularly suitable for Low Noise, Low Power applications and specially in battery powered systems.

In PPAK and SO-8 packages a Shutdown Logic Control function is available TTL compatible. This means that when the device is used as a local regulator, it is possible to put a part of the board in standby, decreasing the total power consumption. It requires only a 2.2 µF capacitor for stability allowing space and cost saving.

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

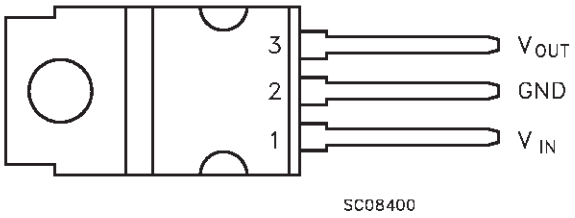
Symbol	Parameter	Value	Unit
V_i	DC Input Voltage	20	V
I_o	Output Current	Internally limited	
P_{tot}	Power Dissipation	Internally limited	
T_{stg}	Storage Temperature Range	- 40 to 150	°C
T_{op}	Operating Junction Temperature Range	- 40 to 125	°C

THERMAL DATA

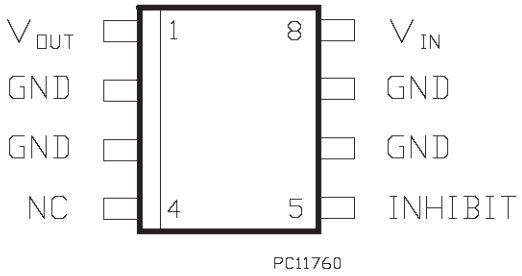
Symbol	Parameter	TO-220	SO-8	DPAK	PPAK	TO-92	Unit
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	3	20	8	8		°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	50	55(*)	100	100	200	°C/W

(*) Considering 6 cm^2 of copper board heat-sink

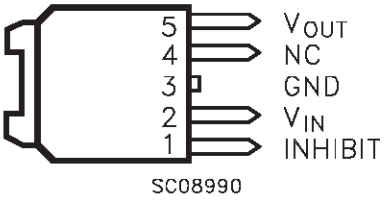
CONNECTION DIAGRAM (top view)



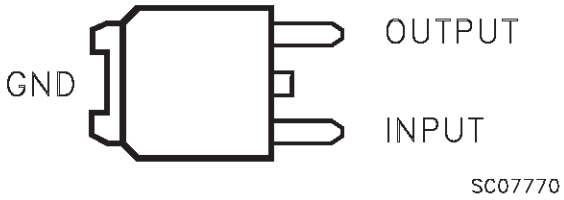
TO-220



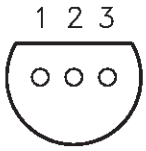
SO-8



PPAK



DPAK



pin 1 = V_{OUT}
pin 2 = GND
pin 3 = V_{IN}

TO-92

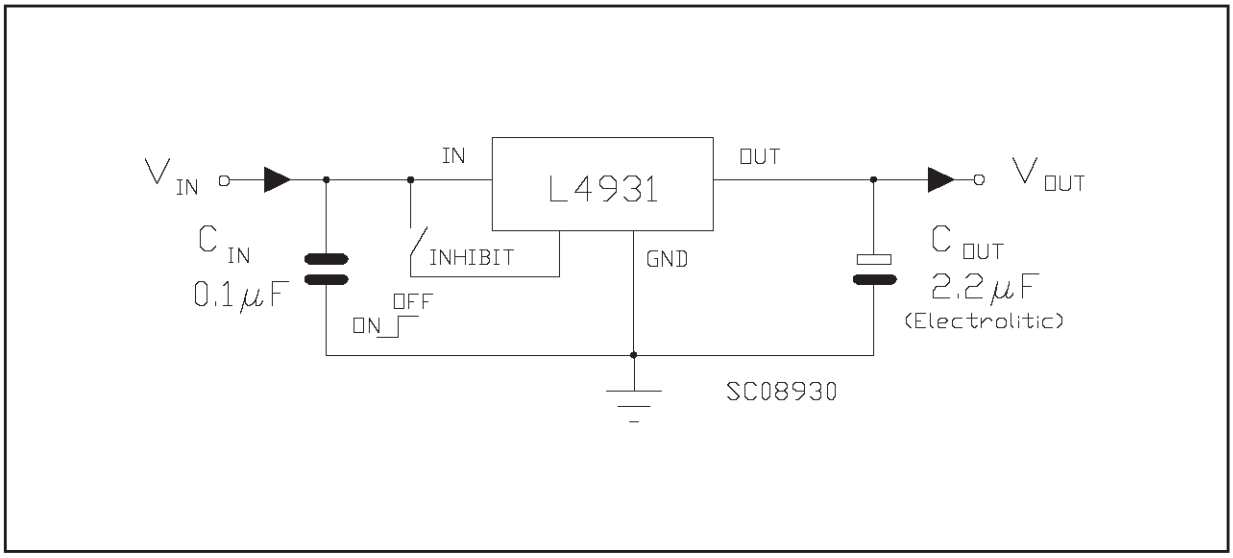
BOTTOM VIEW

ORDERING NUMBERS

TO-220	SO-8	PPAK	DPAK	TO-92	Output Voltage
L4931CV12 (*)	L4931CD12 (*)	L4931CPT12 (*)	L4931CDT12 (*)	L4931CZ12 (*)	1.25 V
L4931ABV12 (*)	L4931ABD12 (*)	L4931ABPT12 (*)	L4931ABDT12 (*)	L4931ABZ12 (*)	1.25 V
L4931CV15 (*)	L4931CD15 (*)	L4931CPT15 (*)	L4931CDT15 (*)	L4931CZ15 (*)	1.5 V
L4931ABV15 (*)	L4931ABD15 (*)	L4931ABPT15 (*)	L4931ABDT15 (*)	L4931ABZ15 (*)	1.5 V
L4931CV25 (*)	L4931CD25 (*)	L4931CPT25 (*)	L4931CDT25 (*)	L4931CZ25 (*)	2.5 V
L4931ABV25 (*)	L4931ABD25 (*)	L4931ABPT25 (*)	L4931ABDT25 (*)	L4931ABZ25 (*)	2.5 V
L4931CV27	L4931CD27	L4931CPT27	L4931CDT27	L4931CZ27	2.7 V
L4931ABV27	L4931ABD27	L4931ABPT27	L4931ABDT27	L4931ABZ27	2.7 V
L4931CV30	L4931CD30	L4931CPT30	L4931CDT30	L4931CZ30	3 V
L4931ABV30	L4931ABD30	L4931ABPT30	L4931ABDT30	L4931ABZ30	3 V
L4931CV33	L4931CD33	L4931CPT33	L4931CDT33	L4931CZ33	3.3 V
L4931ABV33	L4931ABD33	L4931ABT33	L4931ABDT33	L4931ABZ33	3.3 V
L4931CV35	L4931CD35	L4931CPT35	L4931CDT35	L4931CZ35	3.5 V
L4931ABV35	L4931ABD35	L4931ABPT35	L4931ABDT35	L4931ABZ35	3.5 V
L4931CV40	L4931CD40	L4931CPT40	L4931CDT40	L4931CZ40	4 V
L4931ABV40	L4931ABD40	L4931ABPT40	L4931ABDT40	L4931ABZ40	4 V
L4931CV45 (*)	L4931CD45 (*)	L4931CPT45 (*)	L4931CDT45 (*)	L4931CZ45 (*)	4.5 V
L4931ABV45 (*)	L4931ABD45 (*)	L4931ABPT45 (*)	L4931ABDT45 (*)	L4931ABZ45 (*)	4.5 V
L4931CV47	L4931CD47	L4931CPT47	L4931CDT47	L4931CZ47	4.75 V
L4931ABV47	L4931ABD47	L4931ABPT47	L4931ABDT47	L4931ABZ47	4.75 V
L4931CV50	L4931CD50	L4931CPT50	L4931CDT50	L4931CZ50	5 V
L4931ABV50	L4931ABD50	L4931ABPT50	L4931ABDT50	L4931ABZ50	5 V
L4931CV52 (*)	L4931CD52 (*)	L4931CPT52 (*)	L4931CDT52 (*)	L4931CZ52 (*)	5.2 V
L4931ABV52 (*)	L4931ABD52 (*)	L4931ABPT52 (*)	L4931ABDT52 (*)	L4931ABZ52 (*)	5.2 V
L4931CV55 (*)	L4931CD55 (*)	L4931CPT55 (*)	L4931CDT55 (*)	L4931CZ55 (*)	5.5 V
L4931ABV55 (*)	L4931ABD55 (*)	L4931ABPT55 (*)	L4931ABDT55 (*)	L4931ABZ55 (*)	5.5 V
L4931CV60	L4931CD60	L4931CPT60	L4931CDT60	L4931CZ60	6 V
L4931ABV60	L4931ABD60	L4931ABPT60	L4931ABDT60	L4931ABZ60	6 V
L4931CV80	L4931CD80	L4931CPT80	L4931CDT80	L4931CZ80	8 V
L4931ABV80	L4931ABD80	L4931ABPT80	L4931ABDT80	L4931ABZ80	8 V
L4931CV120	L4931CD120	L4931CPT120	L4931CDT120	L4931CZ120	12 V
L4931ABV120	L4931ABD120	L4931ABPT120	L4931ABDT120	L4931ABZ120	12 V

(*) Available on request

TEST CIRCUITS



ELECTRICAL CHARACTERISTICS FOR L4931ABxx12 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 3.3 V I_o = 5 mA, V_i = 3.3 V -25<T_a<85 °C	1.238 1.225	1.25	1.263 1.275	V V
V_i	Operating Input Voltage	I_o = 250 mA	2.5		20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 2.5 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 2.7 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 2.7 to 20 V I_o = 0 mA V_i = 2.7 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 3.7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 80 77 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA		1.25		V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx12 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 3.3 V I_o = 5 mA, V_i = 3.3 V -25<T_a<85 °C	1.225 1.2	1.25	1.275 1.3	V V
V_i	Operating Input Voltage	I_o = 250 mA	2.5		20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 2.5 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 2.7 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 2.7 to 20 V I_o = 0 mA V_i = 2.7 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 3.7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 80 77 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA		1.25		V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx15 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 3.5 V I_o = 5 mA, V_i = 3.5 V -25<T_a<85 °C	1.485 1.47	1.5	1.515 1.53	V V
V_i	Operating Input Voltage	I_o = 250 mA	2.5		20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 2.5 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 2.7 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 2.7 to 20 V I_o = 0 mA V_i = 2.7 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 3.7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 79 76 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA		1		V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx15 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 3.5 V I_o = 5 mA, V_i = 3.5 V -25<T_a<85 °C	1.47 1.44	1.5	1.53 1.56	V V
V_i	Operating Input Voltage	I_o = 250 mA	2.5		20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 2.5 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 2.7 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 2.7 to 20 V I_o = 0 mA V_i = 2.7 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 3.7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 79 76 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA		1		V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx25 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 4.5 V I_o = 5 mA, V_i = 4.5 V -25<T_a<85 °C	2.475 2.45	2.5	2.525 2.55	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 3.2 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 3.4 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 3.4 to 20 V I_o = 0 mA V_i = 3.4 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 4.4 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 75 72 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx25 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 4.5 V I_o = 5 mA, V_i = 4.5 V -25<T_a<85 °C	2.45 2.4	2.5	2.55 2.6	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 3.3 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 3.5 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 3.5 to 20 V I_o = 0 mA V_i = 3.5 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 4.4 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 75 72 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx27 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 4.7 V I_o = 5 mA, V_i = 4.7 V -25<T_a<85 °C	2.673 2.646	2.7	2.727 2.754	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 3.4 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 3.6 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 3.6 to 20 V I_o = 0 mA V_i = 3.6 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 4.6 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 74 71 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx27 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 4.7 V I_o = 5 mA, V_i = 4.7 V -25<T_a<85 °C	2.646 2.592	2.7	2.754 2.808	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 3.5 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 3.7 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 3.7 to 20 V I_o = 0 mA V_i = 3.7 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 4.7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 74 71 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx30 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 5 V I_o = 5 mA, V_i = 5 V -25<T_a<85 °C	2.97 2.94	3	3.03 3.06	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 3.7 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 3.9 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 3.9 to 20 V I_o = 0 mA V_i = 3.9 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 4.9 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 74 71 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx30 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 5 V I_o = 5 mA, V_i = 5 V -25<T_a<85 °C	2.94 2.88	3	3.06 3.12	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 3.8 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 4 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 4 to 20 V I_o = 0 mA V_i = 4 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 5 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 74 71 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx33 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 5.3 V I_o = 5 mA, V_i = 5.3 V -25<T_a<85 °C	3.267 3.234	3.3	3.333 3.366	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 4 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 4.2 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 4.2 to 20 V I_o = 0 mA V_i = 4.2 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 5.2 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 73 70 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx33 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 5.3 V I_o = 5 mA, V_i = 5.3 V -25<T_a<85 °C	3.234 3.168	3.3	3.366 3.432	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 4.1 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 4.3 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 4.3 to 20 V I_o = 0 mA V_i = 4.3 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 5.3 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 73 70 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx35 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 5.5 V I_o = 5 mA, V_i = 5.5 V -25<T_a<85 °C	3.465 3.43	3.5	3.535 3.57	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 4.2 to 20 V, I_o = 0.5 mA		3	15	mV
ΔV_o(*)	Load Regulation	V_i = 4.4 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 4.4 to 20 V I_o = 0 mA V_i = 4.4 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 5.4 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 73 70 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx35 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 5.5 V I_o = 5 mA, V_i = 5.5 V -25<T_a<85 °C	3.43 3.36	3.5	3.57 3.64	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 4.3 to 20 V, I_o = 0.5 mA		3	18	mV
ΔV_o(*)	Load Regulation	V_i = 4.5 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 4.5 to 20 V I_o = 0 mA V_i = 4.5 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 5.5 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 73 70 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx40 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 6 V I_o = 5 mA, V_i = 6 V -25<T_a<85 °C	3.96 3.92	4	4.04 4.08	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 4.7 to 20 V, I_o = 0.5 mA		3.5	17.5	mV
ΔV_o(*)	Load Regulation	V_i = 4.9 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 4.9 to 20 V I_o = 0 mA V_i = 4.9 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 5.9 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 72 69 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx40 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 6 V I_o = 5 mA, V_i = 6 V -25<T_a<85 °C	3.92 3.84	4	4.08 4.16	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 4.8 to 20 V, I_o = 0.5 mA		3.5	21	mV
ΔV_o(*)	Load Regulation	V_i = 5 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 5 to 20 V I_o = 0 mA V_i = 5 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 6 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 72 69 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx45 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 6.5 V I_o = 5 mA, V_i = 6.5 V -25<T_a<85 °C	4.455 4.41	4.5	4.545 4.59	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 5.2 to 20 V, I_o = 0.5 mA		3.5	17.5	mV
ΔV_o(*)	Load Regulation	V_i = 5.4 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 5.4 to 20 V I_o = 0 mA V_i = 5.4 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 6.4 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 71 68 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx45 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 6.5 V I_o = 5 mA, V_i = 6.5 V -25<T_a<85 °C	4.41 4.32	4.5	4.59 4.68	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 5.3 to 20 V, I_o = 0.5 mA		3.5	21	mV
ΔV_o(*)	Load Regulation	V_i = 5.5 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 5.5 to 20 V I_o = 0 mA V_i = 5.5 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 6.5 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 71 68 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx47 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 6.7 V I_o = 5 mA, V_i = 6.7 V -25<T_a<85 °C	4.653 4.606	4.7	4.747 4.794	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 5.4 to 20 V, I_o = 0.5 mA		3.5	17.5	mV
ΔV_o(*)	Load Regulation	V_i = 5.6 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 5.6 to 20 V I_o = 0 mA V_i = 5.6 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 6.6 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 71 68 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx47 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 6.7 V I_o = 5 mA, V_i = 6.7 V -25<T_a<85 °C	4.606 4.512	4.7	4.794 4.888	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 5.5 to 20 V, I_o = 0.5 mA		3.5	21	mV
ΔV_o(*)	Load Regulation	V_i = 5.7 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 5.7 to 20 V I_o = 0 mA V_i = 5.7 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 6.7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 71 68 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx50 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 7 V I_o = 5 mA, V_i = 7 V -25<T_a<85 °C	4.95 4.9	5	5.05 5.1	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 5.8 to 20 V, I_o = 0.5 mA		3.5	17.5	mV
ΔV_o(*)	Load Regulation	V_i = 6 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 6 to 20 V I_o = 0 mA V_i = 6 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 70 67 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx50 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 7 V I_o = 5 mA, V_i = 7 V -25<T_a<85 °C	4.9 4.8	5	5.1 5.2	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 5.8 to 20 V, I_o = 0.5 mA		3.5	21	mV
ΔV_o(*)	Load Regulation	V_i = 6 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 6 to 20 V I_o = 0 mA V_i = 6 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 7 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 70 67 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx52 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 7.2 V I_o = 5 mA, V_i = 7.2 V -25<T_a<85 °C	5.148 5.096	5.2	5.252 5.304	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 6 to 20 V, I_o = 0.5 mA		3.5	17.5	mV
ΔV_o(*)	Load Regulation	V_i = 6.2 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 6.2 to 20 V I_o = 0 mA V_i = 6.2 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 7.2 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 70 67 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx52 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 7.2 V I_o = 5 mA, V_i = 7.2 V -25<T_a<85 °C	5.096 4.992	5.2	5.304 5.408	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 6 to 20 V, I_o = 0.5 mA		3.5	21	mV
ΔV_o(*)	Load Regulation	V_i = 6.2 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 6.2 to 20 V I_o = 0 mA V_i = 6.2 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 7.2 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 70 67 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx55 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 7.5 V I_o = 5 mA, V_i = 7.5 V -25<T_a<85 °C	5.445 5.39	5.5	5.555 5.61	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 6.3 to 20 V, I_o = 0.5 mA		3.5	17.5	mV
ΔV_o(*)	Load Regulation	V_i = 6.5 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 6.5 to 20 V I_o = 0 mA V_i = 6.5 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 7.5 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 70 67 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx55 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 7.5 V I_o = 5 mA, V_i = 7.5 V -25<T_a<85 °C	5.39 5.28	5.5	5.61 5.72	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 6.3 to 20 V, I_o = 0.5 mA		3.5	21	mV
ΔV_o(*)	Load Regulation	V_i = 6.5 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 6.5 to 20 V I_o = 0 mA V_i = 6.5 to 20 V I_o = 250 mA		 0.6 4	 1 6	 mA mA
		OFF MODE V_i = 6 V		50	100	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 7.5 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 70 67 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx60 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 8 V I_o = 5 mA, V_i = 8 V -25<T_a<85 °C	5.94 5.88	6	6.06 6.12	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 6.8 to 20 V, I_o = 0.5 mA		4	20	mV
ΔV_o(*)	Load Regulation	V_i = 7 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 7 to 20 V I_o = 0 mA V_i = 7 to 20 V I_o = 250 mA		 0.8 4.5	 1.6 7	 mA mA
		OFF MODE V_i = 6 V		70	140	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 8 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 69 66 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx60 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 8 V I_o = 5 mA, V_i = 8 V -25<T_a<85 °C	5.88 5.76	6	6.12 6.24	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 6.8 to 20 V, I_o = 0.5 mA		4	24	mV
ΔV_o(*)	Load Regulation	V_i = 7 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 7 to 20 V I_o = 0 mA V_i = 7 to 20 V I_o = 250 mA		 0.8 4.5	 1.6 7	 mA mA
		OFF MODE V_i = 6 V		70	140	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 8 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 69 66 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx80 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 10 V I_o = 5 mA, V_i = 10 V -25<T_a<85 °C	7.92 7.84	8	8.08 8.16	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 8.8 to 20 V, I_o = 0.5 mA		4	20	mV
ΔV_o(*)	Load Regulation	V_i = 9 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 9 to 20 V I_o = 0 mA V_i = 9 to 20 V I_o = 250 mA		 0.8 4.5	 1.6 7	 mA mA
		OFF MODE V_i = 6 V		70	140	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 10 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 67 64 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

ELECTRICAL CHARACTERISTICS FOR L4931Cxx80 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 10 V I_o = 5 mA, V_i = 10 V -25<T_a<85 °C	7.84 7.68	8	8.16 8.32	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 8.9 to 20 V, I_o = 0.5 mA		4	24	mV
ΔV_o(*)	Load Regulation	V_i = 9.1 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 9.1 to 20 V I_o = 0 mA V_i = 9.1 to 20 V I_o = 250 mA		 0.8 4.5	 1.6 7	 mA mA
		OFF MODE V_i = 6 V		70	140	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 10.1 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 67 64 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

ELECTRICAL CHARACTERISTICS FOR L4931ABxx120 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 14 V I_o = 5 mA, V_i = 14 V -25<T_a<85 °C	11.88 11.76	12	12.12 12.24	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 12.8 to 20 V, I_o = 0.5 mA		4	20	mV
ΔV_o(*)	Load Regulation	V_i = 13 V I_o = 0.5 to 250 mA		3	15	mV
I_d	Quiescent Current	ON MODE V_i = 13 to 20 V I_o = 0 mA V_i = 13 to 20 V I_o = 250 mA		 0.8 4.5	 1.6 7	 mA mA
		OFF MODE V_i = 6 V		90	180	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 14 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 64 61 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

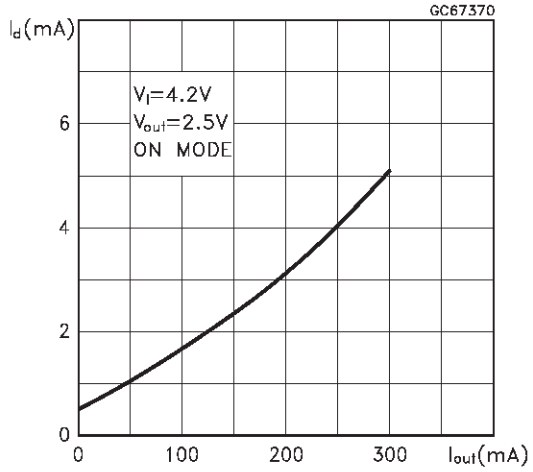
ELECTRICAL CHARACTERISTICS FOR L4931Cxx120 (refer to the test circuits, T_j = 25 °C, C_i = 0.1 µF, C_o = 2.2 µF unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_o	Output Voltage	I_o = 5 mA, V_i = 14 V I_o = 5 mA, V_i = 14 V -25<T_a<85 °C	11.76 11.52	12	12.24 12.48	V V
V_i	Operating Input Voltage	I_o = 250 mA			20	V
I_{out}	Output Current Limit			300		mA
ΔV_o	Line Regulation	V_i = 12.9 to 20 V, I_o = 0.5 mA		4	24	mV
ΔV_o(*)	Load Regulation	V_i = 13.1 V I_o = 0.5 to 250 mA		3	18	mV
I_d	Quiescent Current	ON MODE V_i = 13.1 to 20 V I_o = 0 mA V_i = 13.1 to 20 V I_o = 250 mA		 0.8 4.5	 1.6 7	 mA mA
		OFF MODE V_i = 6 V		90	180	µA
SVR	Supply Voltage Rejection	I_o = 5 mA V_i = 14.1 V ± 1V f = 120 Hz f = 1 KHz f = 10 KHz		 64 61 55		 dB dB dB
eN	Output Noise Voltage	B = 10 Hz to 100 KHz		50		µV
V_d(*)	Dropout Voltage	I_o = 250 mA I_o = 250 mA -40 < T_j < 125 °C		0.4	0.6 0.8	V V
V_{il}	Control Input Logic Low	-40 < T_a < 125 °C			0.8	V
V_{ih}	Control Input Logic High	-40 < T_a < 125 °C	2			V
I_i	Control Input Current	V_i = 6 V, V_c = 6 V		10		µA
C_O	Output Bypass Capacitance	ESR = 0.1 to 10 Ω I_o = 0 to 250 mA	2	10		µF

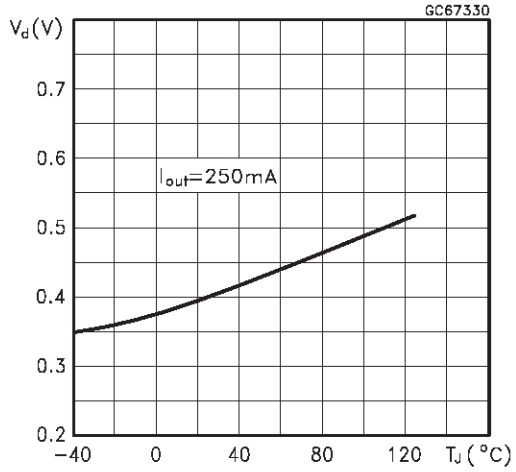
(*) For SO-8 package the maximum limit of load regulation and dropout is increased by 20mV

TYPICAL PERFORMANCE CHARACTERISTICS (unless otherwise specified T_j = 25 °C)

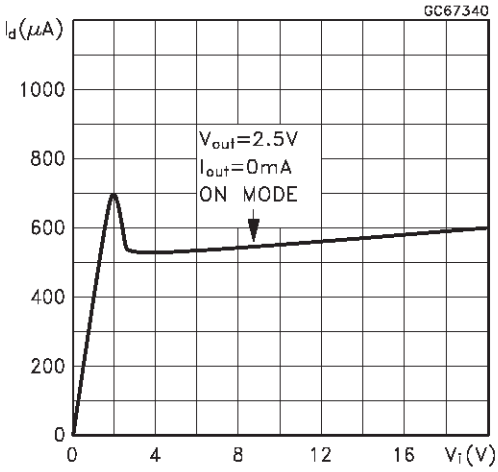
Supply Current vs Output Current



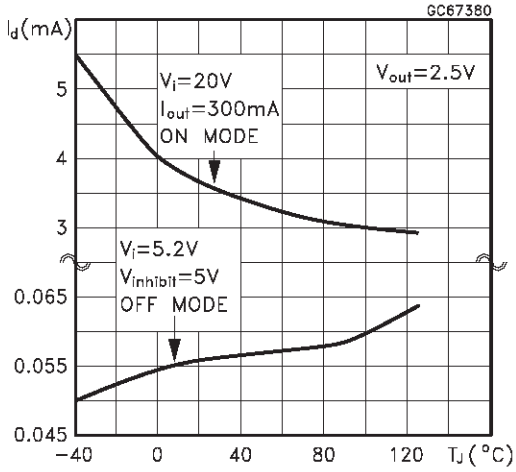
Dropout Voltage vs Temperature



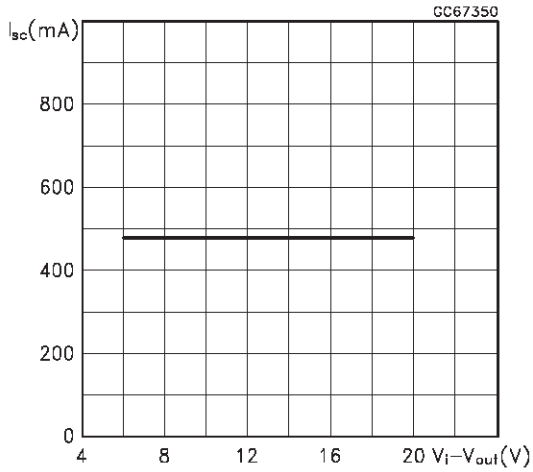
Supply Current vs Input Voltage



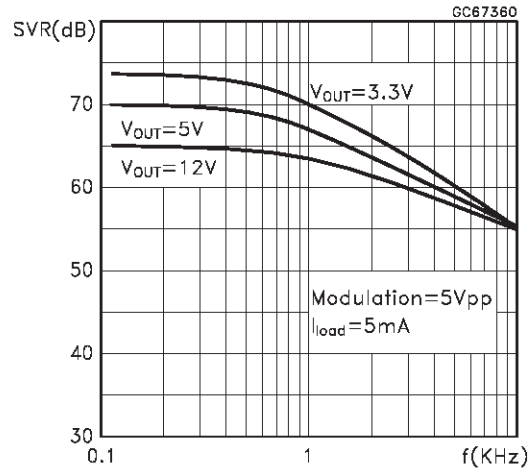
Supply Current vs Temperature



Short Circuit Current vs Dropout Voltage

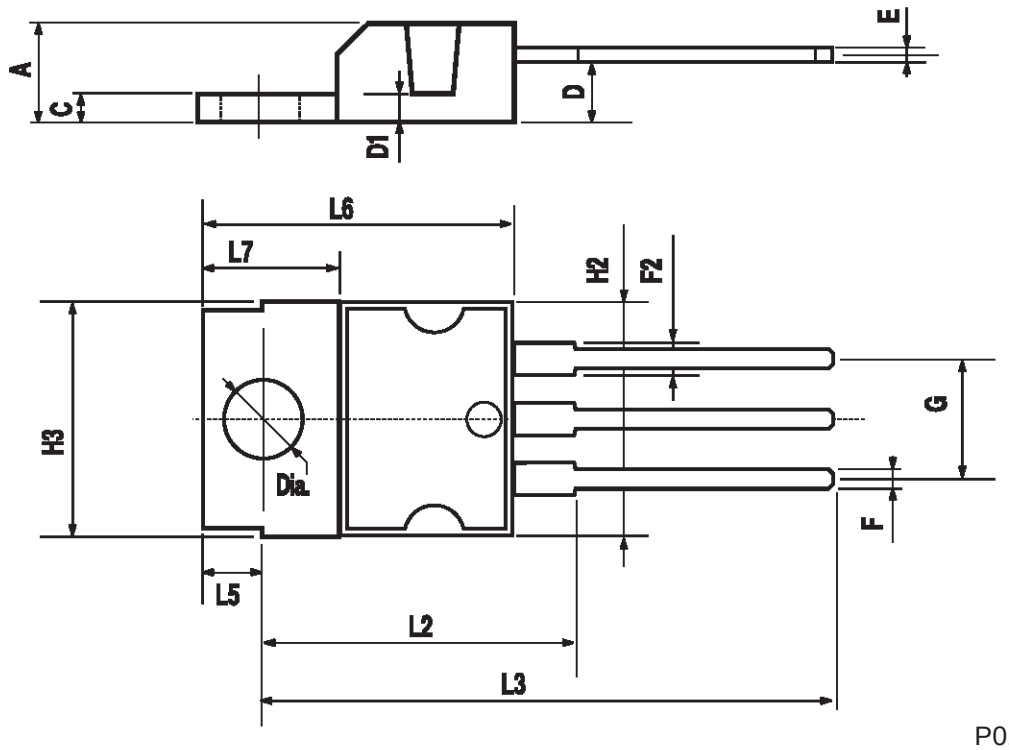


S.V.R. vs Input Voltage Signal Frequency



TO-220 MECHANICAL DATA

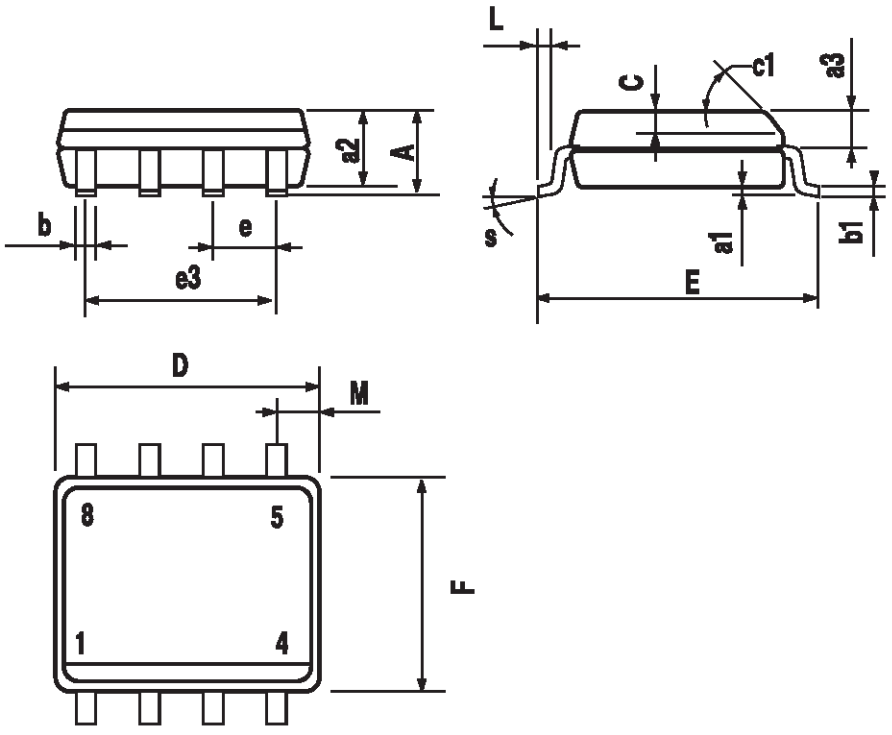
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			4.8			0.189
C			1.37			0.054
D	2.4		2.8	0.094		0.110
D1	1.2		1.35	0.047		0.053
E	0.35		0.55	0.014		0.022
F	0.61		0.94	0.024		0.037
F2	1.15		1.4	0.045		0.055
G	4.95	5.08	5.21	0.195	0.200	0.205
H2			10.4			0.409
H3	10.05		10.4	0.396		0.409
L2		16.2			0.638	
L3	26.3	26.7	27.1	1.035	1.051	1.067
L5	2.6		3	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		6.6	0.236		0.260
Dia.	3.65		3.85	0.144		0.152



P011D

SO-8 MECHANICAL DATA

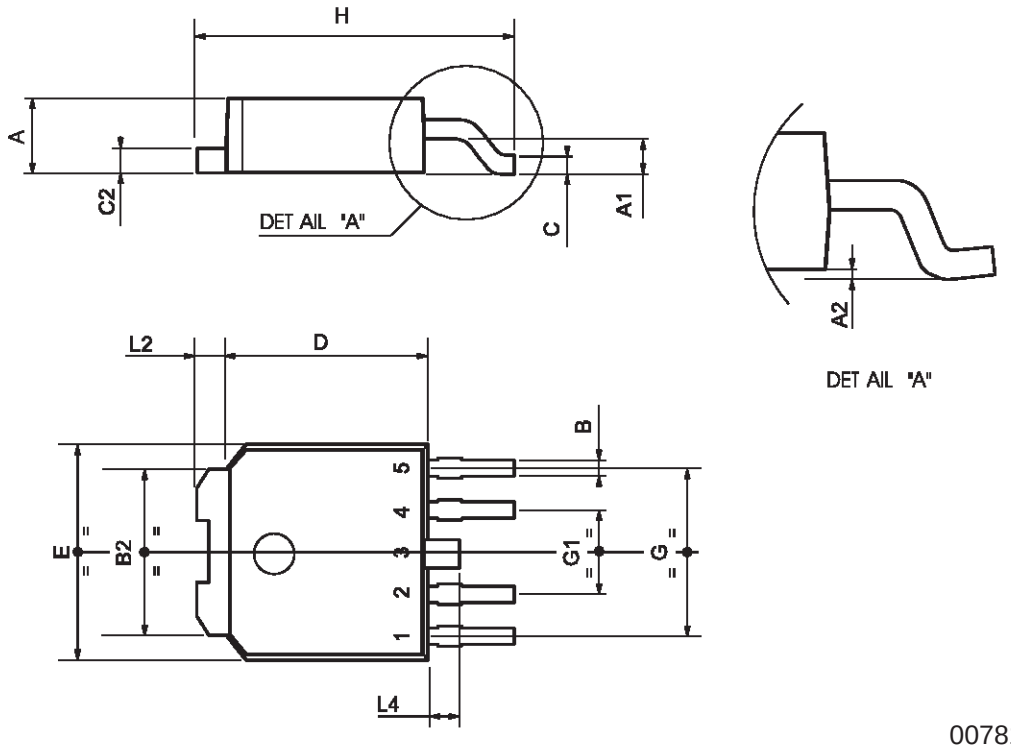
DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.75			0.068
a1	0.1		0.25	0.003		0.009
a2			1.65			0.064
a3	0.65		0.85	0.025		0.033
b	0.35		0.48	0.013		0.018
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.019
c1	45 (typ.)					
D	4.8		5.0	0.188		0.196
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.14		0.157
L	0.4		1.27	0.015		0.050
M			0.6			0.023
S	8 (max.)					



0016023

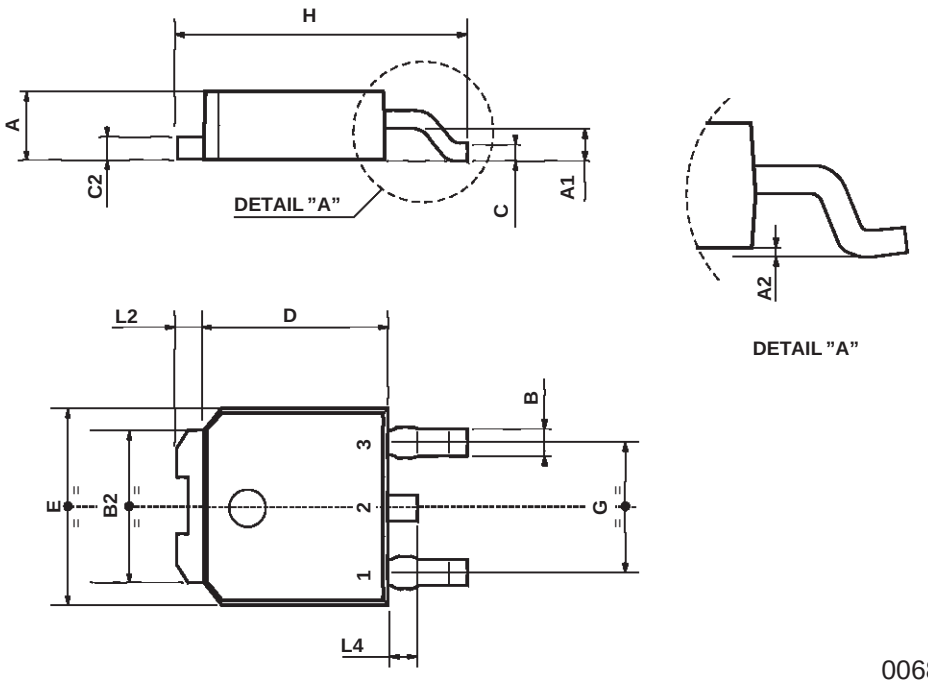
PPAK MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.4		0.6	0.015		0.023
B2	5.2		5.4	0.204		0.212
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
E	6.4		6.6	0.252		0.260
G	4.9		5.25	0.193		0.206
G1	2.38		2.7	0.093		0.106
H	9.35		10.1	0.368		0.397
L2		0.8	1		0.031	0.039
L4	0.6		1	0.023		0.039



TO-252 (DPAK) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.2		2.4	0.086		0.094
A1	0.9		1.1	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.64		0.9	0.025		0.035
B2	5.2		5.4	0.204		0.212
C	0.45		0.6	0.017		0.023
C2	0.48		0.6	0.019		0.023
D	6		6.2	0.236		0.244
E	6.4		6.6	0.252		0.260
G	4.4		4.6	0.173		0.181
H	9.35		10.1	0.368		0.397
L2		0.8			0.031	
L4	0.6		1	0.023		0.039



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